

Case-Based Learning: Our Experience in Clinical Pharmacology Teaching

Sir,

Mastering the art and acquiring the knowledge of prescribing drugs is an essential skill required by all junior doctors. Drugs prescribed to the patients should be appropriate to the case encountered and must have a justification for its use. This justification should be based on principles of both evidence-based approach and recently approved guidelines. Medical students in their early years of career get confused with integrating the knowledge of basic pharmacology and clinical practice. Case-based learning (CBL) in clinical pharmacology can bridge the gap between theory and practice.^[1] Formulating CBL sessions to meet the expected outcomes is the need of the hour in medical curriculum. Clinical pharmacology CBL can amalgamate the concept of development of P-drug list with rationale prescribing habits. We developed and conducted case-based clinical pharmacology session for the 2nd-year medical students and evaluated their learning responses.

Four case-based clinical scenarios were developed keeping in mind the level of knowledge and understanding of 2nd-year MBBS students. A total of 80 students were included in the study. A committee of medical educators from within the faculty was setup to develop this scenario. Areas of knowledge, skills, and ethical consideration were incorporated in the case. No didactic lecturing session regarding this case and related drugs was conducted for the students. The case was uploaded on the e-portal of the university a week ahead of the session. Students were informed about this via university e-mail system and WhatsApp message sent to class representative. Students were provided guidance on the framework of CBL and on how to approach the case. They were provided with a reading list with specific emphasis on drugs used (classification, names of drugs, mechanism of action, adverse effects, drug interactions, and clinical uses based on evidence and approved guidelines).

On the day of the session, students were divided into four groups of eight students each. As each session could accommodate 32 candidates, these sessions were conducted for three times.

Each group was given a CBL along with a questionnaire to discuss. A total of 40 min was given for discussion and for preparing presentation. Each group then displayed their presentation followed by active interaction with the lecturers. Constructive feedback was given to all students at the end of the session. Model answers to questions were uploaded on the university e-portal.

At the end of the session, all students were asked to complete the Dundee Ready Education Environment Measure (DREEM)

questionnaire. The DREEM is a 50-item questionnaire. DREEM questionnaire measures the educational environment in health professional education programs.^[2] The DREEM questionnaire is reported to be appropriate for use within health professional programs.^[2] The DREEM gives a global score out of 200 for the 50 items it contains.^[2] DREEM questionnaire is made up of five subscales, namely perception of teaching, perception of teachers, academic self-perception, perception of atmosphere, and social self-perception.^[2]

In our study, the average overall DREEM score was 155 with a range of 121–175 which indicated excellence in learning pharmacology through CBL session. Perception for learning subscale score was 41 ± 4.10 which indicated “teaching highly thought of.” Perception for teacher’s subscale score was 33 ± 3.62 which indicated “moving in the right direction.” Academic self-perception subscale score was 27 ± 3.83 which indicated “confident about the subject taught.” Perception of atmosphere subscale score was 36.03 ± 2.32 which indicates a “more positive atmosphere,” and social self-perception subscale score was 25 ± 1.82 which indicates “very good socially.” Overall, the scores indicated that students enjoyed learning clinical pharmacology through CBL sessions, and majority of them were satisfied with the understanding of the content of the subject during the session.

CBL session explores the concept of hands-on training in a classroom setting. The effectiveness of CBL is appreciated in various studies till now. We tried using CBL in clinical pharmacology to address the issue problem-solving, critical thinking, and rationale prescribing in medical students. CBL also provides a platform for student-centric learning activities, which enhances problem-solving and critical thinking abilities in early years of medical career. In our study, the scores of perception of atmosphere and social self-perception which measures overall social and learning comfort of students were similar to a study done earlier by Kassebaum *et al.*, where they found that CBL made the learning more enjoyable to the students.^[3] In the present study, scores of academic self-perception and perception for teacher’s were more positive and were similar to the study done by Kamat *et al.*, which assessed the impact of case-based teaching on learning rational prescribing and found it to be better in facilitating the learning process.^[4] The impact of CBL was evaluated in various studies till now, and mostly, all of them concluded that the students enjoyed the sessions and felt that it enhanced their understanding.^[5,6] These findings were similar to the observations of our study.

Our study concludes that use of CBL sessions in clinical pharmacology enhances the quality of learning of the medical

students. Higher order skills such as analysis and application can be developed using this pedagogical approach. Such sessions can help a student develop evidence-based strategy based on the guidelines for appropriate use of drugs. It is a small step in integrating theory with practice in early years of medical career.

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Conflicts of interest

There are no conflicts of interest.

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